We claim:

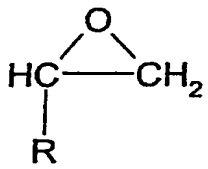
1. A process for preparing an alkylene glycol diether by reacting a linear or cyclic ether with an alkylene oxide in the presence of a Lewis acid, wherein the reaction is carried out continuously in a microreactor.

2. The process according to claim 1 wherein the ether conforms to the formula

$$R^1 - O - R^2$$

where R^1 is C_1 to C_{12} alkyl, R^2 is C_1 to C_{12} alkyl, phenyl or benzyl or wherein R^1 and R^2 combine to form a ring of 5, 6 or 7 atoms that encloses the oxygen atom.

3. The process according to claim 1 and/or 2 wherein the alkylene oxide conforms to the formula



where R is H, halogen, C_1 to C_{10} alkyl, phenyl or benzyl.

4. The process according to one or more of claims 1 to 3 wherein the Lewis acid is selected from metal and nonmetal halides, hydrogen acids, heteropolyacids, haloalkyls, ethers, acid chlorides, acid esters, acid anhydrides, trialkyloxonium salt complexes having identical or different alkyl groups, acylium salt complexes and also unsaturated tertiary oxonium salts.

5. The process according to one or more of claims 1 to 4 wherein a solvent is utilized, said solvent being selected from dichloromethane, nitromethane, benzene, toluene, acetone, ethyl acetate, dioxane, methanol, ethanol, propanol, butanol, methylglycol, methyldiglycol, methyltriglycol or mono- or polyalkylene glycol dimethyl ether.

6. The process according to one or more of claims 1 to 5 wherein the microreactor used has a reaction channel which is a capillary having a round cross section and a diameter in the range from 400 to 1000 µm.